

REMARKS

Claims 1-13 and 15-17 are pending. By this Amendment, claim 1 is amended. No new matter has been added.

Support for the amendment to claim 1 is found, for example, on page 13, line 26 – page 14, line 4.

An Information Disclosure Statement with Form PTO-1449 was filed in the above-captioned application on August 1, 2003 as shown in the attached PTO receipt. Applicant has not yet received from the Examiner a copy of the Form PTO-1449 initialed to acknowledge the fact that the Examiner has considered the disclosed information. The Examiner is requested to initial and return to the undersigned, a copy of the Form PTO-1449. For the convenience of the Examiner, a copy of that form is attached.

For the following reasons, Applicant respectfully requests reconsideration.

I. SECTION 112, FIRST PARAGRAPH REJECTION

On page 2, Item 2 of the Office Action, claims 1-13 and 15-17 are rejected under 35 U.S.C. §112, first paragraph for alleged non-enablement of deposition of all ceramic materials. Applicant respectfully traverses.

The specification in the Detailed Description of the Embodiment section disclosing the first, second, and third embodiment specifically enables one of ordinary skill in the art, without undue experimentation, to practice the claimed invention. Specifically, page 10, lines 25-27 indicates that a device capable of performing LSMCS or a misted CVD is used as a manufacturing device for the ceramics. Ceramic is a general term encompassing a wide variety of materials, as shown in the technical definition as found in the McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition, on page 358. Namely, ceramic includes oxides, nitrides, borides, carbides, silicides, sulfides, as well as intermetallic compounds that includes aluminides, beryllides, phosphides, antimonides, and arsenides. As

many compounds are included as ceramics and they may be used, Applicant submits that the claims are enabled. Withdrawal of the rejection is respectfully requested.

II. PRIOR ART REJECTIONS

The Office Action rejects claims 1, 4-8, 11 and 15 under 35 U.S.C. §102(b) over JP 402179880 to Koketsu et al. (hereinafter "Koketsu"); claims 1, 4-11 and 15-17 under 35 U.S.C. §102(e) over U.S. Patent No. 6,110,531 to Paz de Araujo et al. (hereinafter "Paz"); claims 2 and 3 under 35 U.S.C. §103(a) over Koketsu in view of U.S. Patent No. 6,146,905 to Chivukula et al. (hereinafter "Chivukula"); and claims 12 and 13 under 35 U.S.C. §103(a) over Koketsu in view of U.S. Patent No. 6,120,846 to Hintermaier et al. (hereinafter "Hintermaier"). The rejections are respectfully traversed.

Applicant respectfully submits that none of the applied references disclose a method for manufacturing ceramics, comprising, ... feeding the mixed fine particles and active species to the substrate so that the fine particles of the raw material species are deposited on the substrate while being provided with kinetic energy from the active species, and the migration energy of atoms in the film is increased by providing energy to the fine particles of the raw material species by the active species, as recited in claim 1.

Koketsu discloses that the mist is introduced into the upper part of the reaction tube 4 with a first carrier gas 3 and a second carrier gas 5, as well as a gaseous oxygen for generating oxygen plasma and microwaves from the microwave oscillator that is used to generate oxygen plasma 9 (see Abstract and Constitution). However, Koketsu fails to disclose that the migration energy of atoms in the film is increased by providing energy to the fine particles of the raw material species by the active species, as recited in claim 1.

Paz discloses ion coupled plasma (ICP) excitation of the reacting gas in the deposition reactor, which accelerates the rate of decomposition and reaction by overcoming kinetic barriers to reaction without adding heat to the reaction (col. 3, lines 12-15). Col. 5,

lines 21-30 cited by the Examiner indicates that the carrier gases may be inert or active, that is, may be inert or has become a plasma. Col. 5, lines 45-56 disclose carrier gases that pass through the cavity 20 and by ultrasonic vibration, mixes with the liquid. (See also cols. 8-10, lines 39-63, col. 13, line 50 – col. 14, line 10). However, Paz fails to disclose that the migration energy of atoms in the film is increased by providing energy to the fine particles of the raw material species by the active species, as recited in claim 1.

Secondary reference, Chivukula, which discloses first depositing a layer of amorphous ferroelectric precursor which is then annealed in an oxygen containing atmosphere in the presence of water vapor (Abstract), and does not disclose even mixing a fine particle of raw material species with an active species, fails to overcome the deficiencies in Koketsu or Paz. Hintermaier, another secondary reference, which discloses deposition of desired material in a conventional chemical vapor deposition apparatus (col. 4, line 61 – col. 5, line 25) fails to disclose that the migration energy of atoms in the film is increased by providing energy to the fine particles of the raw material species by the active species, as recited in claim 1.

Consequently, claim 1 is patentable over the applied references. Claims 2-13 and 15-17, which depend from claim 1, are likewise patentable over all of the applied references for at least the reasons discussed above, and for the additional features they recite.

Withdrawal of the rejections of claims 1-13 and 15-17 are respectfully requested.

III. CONCLUSION

For the reasons stated above, Applicant submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-13 and 15-17 are respectfully requested.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,



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Attachments:

McGraw-Hill Dictionary of Scientific and Technical Terms,
Sixth Edition, page 358
Stamped PTO Receipt
Copy of Form PTO-1449 filed August 1, 2003
Information Disclosure Statement

Date: March 17, 2004

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